2) Take these introductory geology courses

GEOL 205

Spring (4). CHEM 115A is a co- or pre-req.

Math 161

 (4)

CHEM 115A

(4)

CHEM 115B

(4)

PHYSICS Option 1

 (4)

PHYSICS Option 2

 (4)

GEOL 303

(4). Take with GEOL 304 when possible.

GEOL 304 (1) & GEOL 309 (4)

Offered in Fall. Take courses at the same time the first semester possible.

GEOL 102 (3), GEOL 105 (3), GEOL 107 (3), GEOL 110 (4), SCI 120A (6), ANTR 202 (3), GEP 201 (3), GEP 352 (3), or equivalent. Most transfer majors will have taken an equivalent to these courses.

,

Summer: GEOL 427 (6)

Total units (120+): \_\_\_\_

Spring Semester 4

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Fall Semester 4

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Fall Semester 3

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Spring Semester 3

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Spring Semester 2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Fall Semester 2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Spring Semester 1

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

Fall Semester 1

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

Semester units \_\_\_\_

GEOL 301 (3), GEOL 302 (3), GEOL 305 (3), GEOL 310 (4), GEOL 320 (4), GEOL 321 (3), GEOL 323 (3), GEOL 390 (1), GEOL 426A (3), GEOL 426B (3), GEOL 495 (1-4)

**B.S. in Geology Advising Checklist**

Take 9 additional units of upper division geology

Required Math, Chemistry, and Physics

GEOL 427

Summer (6)

GEOL 420

Spring (4)

4) Then take these capstone geology courses

GEOL 311/312

Spring (5)

GEOL 313/314

Fall (5)

GEOL 317/318

Fall (5)

GEOL 307/308

Fall (5). GEOL 205 is a pre-req and CHEM 115B is a co- or pre-req.

3) Take these core geology courses

1) Take a pre-requisite to GEOL 303

**Overview:**

Welcome! The B.S. in Geology is ideal for attending graduate school in any subfield in geology, or for becoming registered as a Professional Geologist (PG) with the State of California, or a Hydrogeologist or Geophysicist. See: bpelsg.ca.gov. Contact us for more information!

Bear in mind when considering the BS in Geology that you are required to attend summer field camp as equivalent to SSU Geology 427 – Advanced Field Geology, usually in the summer after you walk at SSU Commencement. Early on you should research which camp you would like to attend (e.g., at <https://geology.com/field-camp.shtml> or <https://geologyfieldcamp.com/>) in order to ensure that you have enough funds to go to the camp of your choosing. Also, other students in the department are a good way to gather information about summer field camps. You will have to apply to another university and be accepted into their field camp, attend field camp, and transfer the units back to SSU by requesting a transcript from that school to complete your degree. Field camps vary widely in cost. See also Geology 427 below under degree requirements.

**Core Courses in the B.S. Major:**

GEOL 205: Mineralogy (Spring only). Prerequisite is prior or concurrent enrollment in GEOL 303 and also in Chemistry 115A General Chemistry (or equivalent elsewhere).

GEOL 303: Advanced Principles of Geology (Fall and Spring). Prerequisite: Completion of GE Golden Four (A1, A2, A3, B4) with a C- or better and completion of B1, B2 and at least 45 units. Completion of one: SCI120, GEOL102, GEOL105, GEOL110, GEOL107, GEOL120, GEP201, GEP352, ANTH202, or equivalent of these. This class fills the major requirement and also Upper Division B (UDB), but only if you have already taken 45 college-level units. You can take this course before arriving at 45 units, and you will get your UDB GE requirement completed when you take GEOL 311.

GEOL 304: Geologic Mapping and Report Writing (Fall and Spring), which is a field course. The pre- or co-requisite is GEOL 303. We advise that you take 303 and 304 together when they are offered in the same semester. Offered every Fall and occasionally in Spring. There is a 5-day required field trip in GEOL 304.

GEOL 309: Computer Applications in Geology (Fall only). The prerequisite is GEOL 303 or concurrent enrollment in GEOL 303.

**Take all the following 300-level pairs of Geology courses, each pair consists of a lecture-lab course and an accompanying field course (this is a group of 8 courses total):**

GEOL 307 & 308: Igneous and Metamorphic Petrology (Fall only), and the Field course Prerequisite is GEOL 205, Mineralogy (which itself has a prerequisite of CHEM 115A) and GEOL 303. There is a 5-day required field trip in GEOL 308.

GEOL 311 & 312: Sedimentary Geology (Spring only), and the Field course. Prerequisite is GEOL 303 and GEOL 304. There is a 5-day required field trip in GEOL 312.

GEOL 313 & 314: Paleontology (Fall only), and the Field course. Prerequisite is GEOL 303 or GEOL 102. There is a 5-day required field trip in GEOL 314.

GEOL 317 & 318: Structural Geology (Fall only), and the Field course. Prerequisites are GEOL 303, GEOL 304, and a mathematics course in Trigonometry. There is a 5-day required field trip in GEOL 318.

**Take the following two capstone mapping and field geology courses once you have finished all the above-listed core courses (one of the 300-level classes above may be taken concurrently with GEOL 420, with instructor permission):**

GEOL 420: Integrative Field Experience (Spring only). Often referred to as Senior Field, there is a 10-day required field trip in GEOL 420 over Spring Break.

GEOL 427: Advanced Field Geology. We call this course Summer Field Camp and it is usually taken in the summer after you walk at Commencement. Please be aware of the additional cost of this course and plan early for how you will finance the course. You must apply and be accepted at another university’s summer field camp, then transfer the units back to SSU by requesting a transcript from that school. Ask if you have questions.

**Elective Courses:**

**Take 9 units of upper-division (300+ level) geology courses from the following list:**

GEOL 301: Natural History of the Hawaiian Islands. (3 units) Upper Division GE, GE B3.

GEOL 302: The Geology of Climate Change. (3 units) Upper Division GE B.

GEOL 305: Geology of America’s National Parks. (3 units). Upper Division GE B.

GEOL 306: Environmental Geology. (3 units) (currently dormant)

GEOL 310: Geophysics. (4 units, GEOL 303 and MATH through trigonometry are prerequisites). May also be counted as your second semester of physics and may be taken before you take physics. (Spring only)

GEOL 320: Basin Analysis. (4 units, GEOL 311 prerequisite) (offered every other year)

GEOL 321: Burgess Shale Paleontology. (Fall only). (3 units, prerequisites GEOL 313, 314). There is a 6-day required field trip in GEOL 321 to Canada. By permission only.

GEOL 323: Hydrology. (3 units, GEOL 102 or consent; MATH 106 or 107) (Spring only, temporary hiatus)

GEOL 326: Stratigraphy and Earth History. (4 units, GEOL 303 or consent) (dormant)

GEOL 390: Geology Colloquim. (1 unit)

GEOL 422: Geochemistry. (3 units) (currently dormant)

GEOL 425: Economic Geology. (3 units) (currently dormant)

GEOL 426A & B: Senior Thesis. (3 units each) – prior arrangements with a particular faculty mentor are required. (Fall and Spring)

**Department policy on Senior Thesis:**

The student must have a 3.00 or higher departmental grade point average. The student must have demonstrated the ability to work independently and do quality work in both the lecture and the field classes. The student must submit a detailed proposal of work, a schedule, and the expected results. The student must have a faculty sponsor who is willing to advise the project and will set up a schedule of meetings for this purpose. Two copies of the final paper/report will be filed with the department office before a grade will be assigned. The student must be presented at the department colloquium.

GEOL 495: Special Studies. (1-4 units) – prior arrangements with a particular faculty mentor are required. (Fall and Spring)

**Electives in other departments:**

Consult with your Geology Department advisor if you would like to consider a course in another department on campus to count toward your electives. Seek approval before taking the course.

**Required Support Courses: Math, Chemistry, & Physics:**

Note: Graduate schools often require a full year (two semesters) of calculus and physics (not counting Geophysics). If you are considering applying to graduate school (masters: M.A. or M.S., or doctorate: Ph.D.) you should consult with one of the professors in the Geology Department.

**Take the following math course:**

MATH 161: Calculus I – Differential and Integral Calculus (4 units), also consider taking Calc I as MATH 161X, which has more emphasis on review of pre-calculus topics.

**Take both of these chemistry courses:**

CHEM 115A: General Chemistry (Note: CHEM 115A is a prerequisite for GEOL 205 – Mineralogy).

CHEM 115B: General Chemistry II

**Take the following physics courses (one year of physics, with several options below):**

PHYS 114/116 (Calc-based) or PHYS 210A/209A (Trig-based) = first semester physics. Note: it is required that you take both the lecture AND the lab section of these physics courses.

And PHYS 214/216 (Calc-based) or PHYS 210B/209B (Trig-based), or GEOL 310 Geophysics. The Geophysics class may be taken prior to taking your first physics course. Any of these three courses are considered the second semester physics.

Ask if you have questions about physics. Note: it is required that you take both the lecture AND the lab section of these physics courses. Also note: Some graduate schools require a full year of physics, not counting Geophysics.

**See any of the Geology Department faculty if you are interested in majoring in Geology:**

The department office and the faculty offices are next to the Dilophosaurus dinosaur skeleton on the first floor of Darwin Hall, east end (the other end from the elevator).